

(ii) *Vertical integration among operating units and increased sales of refined metals.*

As part of its vertical integration strategy, GMEXICO has expanded the capacity of Mexcobre's low-cost smelter from 180,000 to 360,00 metric tons of copper per year in order to consolidate GMEXICO's copper processing capacity at La Caridad. In addition, GMEXICO constructed a new copper refinery at La Caridad, which is operating at a capacity of 300,000 metric tons per year, and a copper rod plant. Likewise, GMEXICO constructed a precious metals refinery as part of the same complex. These facilities have allowed GMEXICO to sell predominantly refined products and to realize additional margins associated with sales of high grade refined metals. GMEXICO will continue to seek opportunities for vertical integration in copper, zinc, gold, silver and coal.

(iii) *Diversification of markets and expansion of customer base.*

GMEXICO seeks to remain Mexico's leading supplier of copper and zinc, while strengthening its market share in the United States, Europe, and Asia. In addition, GMEXICO seeks to expand its customer base by increasing its sales of high quality refined metals to end-users and providing specialized products and services to its customers. Notwithstanding the inherent risk in diversification and the current downward trend in copper prices, GMEXICO considers it is well-situated to continue to expand its sales of the highest quality refined metals to a geographically diverse customer base.

(iv) *Strategic Acquisitions*

GMEXICO has capitalized its growth opportunities through strategic acquisitions. Low prices for copper and other metals made it possible to make the acquisition of Asarco. GMEXICO was able to be consolidated and reach the position of third producer of copper in the world, only behind Codelco Inc. and Phelps Dodge Corporation, mining companies of Chile and the United States of America, respectively. GMEXICO may consider acquiring other businesses engaged in extraction or processing of nonferrous metals, particularly in Latin America.

(v) *Improved productivity in railroad operations.*

GMEXICO initiated its railroad operations in February 1998, and its principal purpose has been to improve its services efficiency in order to become one of the most competitive railroad lines worldwide. As a part of this process, GMEXICO has entered into collective work agreements based on productivity and modernization.

Ferromex started its operations in February 1998, and during the first two operating tax years the freight volume carried on the railroad line has increased by 24.5%, from 19,041 million tons in 1998 to 23,703 million tons in 1999. The agricultural segment has been the most dynamic market, as well as international transport of goods where there has been an increase in traffic, particularly the border sites of Piedras Negras, Ciudad Juárez, and Nogales.

Likewise, approximately U.S.\$ 280.2 million have been invested in the first two years of operations, which have been directed basically to the reconstruction of rail, improvement of workshops and stations, yard expansion, the acquisition of operating and administrative systems, and acquisition of 50 new General Electric locomotives with 4,400 horse power, with the purpose of upgrading transport equipment.

b) **Distribution channels.**

Mining Division

As one of Mexico's leading exporters, GMEXICO undertakes significant marketing efforts in order to increase its international customer base. GMEXICO coordinates its global marketing through its Mexico City and New York sales offices. In 1997, 1998, and 1999 GMEXICO's export sales represented 51%, 51% and 48% respectively, of the mining division net sales.

Its main copper consumers are in the construction sector, in the manufacturing of electrical and electronic products and to a lesser extent, machinery and industrial equipment, general consumption products, and in the transportation sector. GMEXICO sells copper anodes and copper blisters to copper refineries, and copper cathodes, rods and copper slabs to industrial consumers. The majority of GMEXICO's copper sales are executed through one year contracts.

In 1999, approximately 29.7% of the copper sales were carried out in Mexico, 68.8% in the United States and 1.5% in Asia. GMEXICO is Mexico's leading supplier of copper. In the year 2000 GMEXICO expects to list its copper cathode commodities on the LME, which will permit GMEXICO to directly sell copper cathodes at the LME as a last resort buyer.

The following table shows an analysis by geographic segment of GMEXICO's sales in the years 1998, 1999, and the first six months of the year 2000:

<u>Sales in millions of constant pesos as of June 30, 2000</u>			
	<u>June 30, 2000</u>	<u>1999</u>	<u>1998</u>
United States	Ps.9,821.2	Ps.7,008.1	Ps.7,454.3
México	4,564.3	9,613.2	8,118.9
Europe	711.8	879.1	533.2
Asia	105.4	458.6	410.5
Latin America	42.2	120.0	64.8
Total sales and services	Ps.15,244.9	Ps.18,079.0	Ps.16,581.7

Zinc is primarily used to make galvanized metal products, alloys, brass products, zinc oxide and rolled zinc and for products of other industrial uses. GMEXICO sells three grades of refined zinc, (two of which are registered on the LME), to industrial users, principally steel mills, and it sells zinc concentrates to other zinc refineries. Refined zinc is sold under one year contracts to United States costumers, one month contracts to Mexican customers as well as on a spot sale basis.

The principal uses for silver are in the photography industry, electrical and electronic products, silverware, jewelry and to a lesser extent, welding alloys and miscellaneous uses. GMEXICO sells silver to metal traders on a spot basis, as well as to industrial users under long-term contracts. In 1999, approximately 7.0% of the sales were executed in Mexico, 86.0% of the sales were made in the United States, and 1.0% in Europe, and 6.0% in Asia. GMEXICO has listed its production of refined silver on the LME, Comex and the London Bullion Market Association.

Railroad Division

The market strategy undertaken by Ferromex is with the purpose of covering the Mexican freight market. During the first year and ten months of its operations, Ferromex significantly increased its freight volume capacity. Agricultural markets in places such as Sonora and Sinaloa were the most dynamic, with record levels in productivity. International traffic also showed an increase, particularly in the border sites of Piedras Negras, Ciudad Juárez and Nogales, as well as Intermodal transport in ports, with automobile, beer, metals, cement and mineral exports, among others.

c) Patents, Licences, Trademarks and other Agreements.

GMEXICO, through its subsidiaries, has a number of trademarks in Mexico and abroad, registered basically in international classes 1, 6 and 14 which cover chemical products, common metals, and precious metals, respectively. In the same manner, GMEXICO, through Immsa, Asarco and other subsidiaries, has a number of registrations in Mexico, the United States of America, Peru and in other parts of the world, of patents and inventions with respect to different mining processes. In the railroad division GMEXICO has registered trademarks, primarily in the international classes 39 and 35, corresponding to the identification of the railroad lines it operates and to the services it renders. Trademarks give GMEXICO and its subsidiaries the opportunity to sell products with higher value added and better recognized in the metals markets with regard to their purity.

d) Principal Costumers.

Mining Division

GMM, Asarco and SPCC trade refined and unrefined products among which are the following:

- Metallic copper:** Products under this group are: copper cathode, copper rods, copper cake, and copper blister, representing 65.5% of the mining segment revenues. Of the total metallic copper sold in 1999, 48.2% corresponded to domestic sales, with Mexico Grupo IUSA and Cobre de México as the principal costumers which accounted for 80% of the domestic sales of this product. GMEXICO's export sales through GMM, Asarco and SPCC include Essex Group, Bicc Cables, Gerald Metals, Olin Corporation, Metallgesellschaft, and Pechiney World Trade as principal costumers which accounted for 77.1% of its metallic copper export revenues.
- Refined zinc:** This product represented 9.5% of the mining segment revenues. The export sales of this product in 1999 represented 40% and the principal costumers were Bethlehem Steel and LTV Steel who jointly represented 63.6% of such sales. With regard to domestic sales, they were concentrated basically on Aluminio y Zinc Industrial, S.A., Grupo Nacobre and Grupo IUSA, which are the principal costumers with 72.6% of the total revenues of refined zinc.
- Zinc Concentrate:** In 1999, 97.3% of the total revenues from zinc concentrate were export sales mainly to Metallgesellschaft and Euromin.
- Lead:** In 1999, the principal costumers were Peñoles in Mexico and abroad Sogem. The revenues under this item represented 2.2% of the mining segment, 67.8% of which were domestic sales.
- Silver:** In 1999 the principal costumers were The Bank of Nova Scotia and AIG Trading and in domestic sales, Internacional de Metales, S.A. de C.V. It is noteworthy that in 1998 100% of the sales were export sales.

Railroad Division

Ferromex renders freight transportation services in the following segments:

- Grains:** Products transported include corn, wheat (spring and winter crops), sorghum, soy, soybeans, malt, barley, canola, sunflower, and other oleaginous seeds, vegetable oils and meal, cellulose, wood products, among others. Grains constitute Ferromex's largest product segment in terms of revenues, representing approximately 26% of the total. Grain transportation represents approximately 60% of domestic shipments; imported grains, basically corn and wheat, 35%, and exports 5%. Ferromex controls the largest share of railroad borne traffic in grains and other crops in Mexico since the route system covers approximately 80% of the grain growing regions of Mexico, including, for example, the corn growing regions in and around Irapuato and Guadalajara and the winter crops in Sonora, Sinaloa and Tamaulipas. Principal costumers include domestic grain and oleaginous seed millers and processors such as Molinos Azteca, Proteínas Industriales de La Laguna, Almidones Mexicanos, S.A. de C.V., Aceites, Grasas y Derivados, S.A. de C.V. In April 1999, Ferromex lost its largest costumer when the Federal Government company CONASUPO, which acted as a buyer and seller of corn at below-market prices, was dissolved. Ferromex has replaced this segment of its business with a wider range of costumers. Volumes and tariffs are significantly influenced by spot and future prices in commodity markets, by shortages and surpluses due to economic, harvest and weather-related matters. The five largest costumers in this segment represented approximately 21.2% of this segment revenues in the period ended at December 31, 1999.
- Minerals:** Products transported include coal, coke, iron ore, dolomite, copper ore, lead, silica, sand and limestone, precios metals concentrates and other inorganic products. Mineral products constitute Ferromex's second most important segment in terms of

revenues, representing approximately 20% of the totals in such categories. Domestic unitary train shipments account for approximately 80% of railroad borne mineral traffic, and Ferromex's management considers that Ferromex transports approximately two-thirds of all this traffic in Mexico including, for example, transport of iron ore from the mines in and around Colima to the smelters in the steel manufacturing centers of Puebla and Monterrey. Principal costumers include Hojalata y Lámina, S.A. de C.V. (Hylsa), Vitro Corporativo, various coal-fired operating thermo-electrical plants, and GMM. In September Ferromex acquired trackage rights on the Nogales-Nacozari short Line to access Cananea copper mine and GMM's smelter, as well as the Nacozari copper mine in the State of Sonora. Before freight volumes of copper ore, copper blister and refined copper bar increase significantly, GMM will have to install certain cranes and lifters at the mines to facilitate on-loading of ore into hopper cars. In recent years, depressed prices in international markets for minerals, including copper, gold, and silver have put pressure on tariff rates in this segment. Because of improved delivery schedules and more competitive tariffs since the privatization of the railroad, Ferromex has been able to increase traffic volumes. Ferromex considers that levels of imports of coal, iron ore, and copper ore will represent an increasing level of traffic in this segment in future years, in response to increased domestic heavy industry production. The four largest costumers in this segment represented approximately 92.3% of the revenues of this segment as of December 31, 1999.

Industrial:

Products transported include beer, refined sugar, corn flour, household appliances and electrical equipment, machinery, wood products, paper products, including scrap. Industrial products constitute Ferromex's third largest segment in terms of revenues, representing 13% of the total amount in 1999. Railroad transport in this product segment is predominantly domestic, with export traffic, primarily beer, representing approximately 5% of the total traffic. Cerveceria Modelo, S.A. de C.V. and Valores Industriales, S.A. (formerly FEMSA) are its principal customers. Railroad traffic in this segment tends to be more seasonal than in other segments because of the importance of beer shipments (primarily for export) in the summer and household appliances for the Christmas season. Ferromex is trying to increase volume shipments of beer to Piedras Negras and Ciudad Juárez, United States gateway ports to the United States which are served by Ferromex, and thereby compete more effectivly with Nuevo Laredo, the entry port to the United States with the highest volume of import and export traffic with Mexico, which is served by TFM. In cases other than beer, traffic is less dependent on high volume shipments and tariff rates per ton kilometer tend to be higher than in other commodity segments. The five largest customers in this segment represented approximately 43.7% of this segment revenues as of December 31, 1999.

Cement:

Products shipped include cement and clinker in bags and bulk. Railroad transport of cement represents 10% of both revenues and revenues ton/kilometers. The principal customers include Cemex Mexico, S.A. de C.V., Cementos Apasco, S.A. de C.V., and Cementos Chihuahua, S.A. de C.V. In this segment, Ferromex has been able to execute long-term contracts, with dollar tariffs. The three largest costumers in this segment account for 93% of the revenues of this segment as of December 31, 1999.

Petroleum by-products:

Products moved are fuel, diesel, and gasoline, representing 8% in tons/kilometer and 5% in Ferromex's total revenues. The main customers are CFE and Pemex which have executed annual contracts with Ferromex. The three largest costumers in this segment accounted for 94% of this segment revenues as of December 31, 1999.

Intermodal:

Finished packed products shipped within containers are: garments, textiles, consumer electronics, automotive parts, processed foods and perishables. Principal customers are ocean carriers including APL, TMM, Maersk Mexico, S.A. de C.V., and Hanjin Shipping. The railroads must provide cranes and crews to remove the customer's single, double and triple stack containers from cars. The customers are responsible for tractoring and shippers are responsible for payment of customs

duties. Ferromex serves Tampico/Altamira and Manzanillo, two of the most important ports in Mexico with container handling infrastructure. It also has interline access to Veracruz, Lázaro Cárdenas, and Coatzacoalcas and serves intermodal terminals of Guadalajara, Manzanillo, Torreón and Hermosillo. Usually, most intermodal traffic consists of imports originating in the United States. Ferromex considers that intermodal freight is a high potential growth segment as railroad traffic only handles 5% of the intermodal traffic compared to autotransportation. When port and terminal services and relevant equipment are updated and customs procedures are streamlined to address intermodal transport, traffic levels in this segment will increase significantly. The five largest customers in this segment accounted for 81% of the revenues of this segment as of December 31, 1999.

- Metals:** Principal products are steel plates in cakes and rolls. Principal customers are Siderúrgica Guadalajara, S.A. de C.V. and De Acero S.A. de C.V.. The three largest customers in this segment represent approximately 63% of the total revenues of this segment as of December 31, 1999.
- Chemicals:** Principal products shipped are sulphuric acid, chlorine and salt for the following customers: Mexcobre, Dupont, Grupo Mexhichem. The cars used for transporting chemicals are generally owned by the customers. The three largest customers in this segment represent approximately 47% of the total revenues of this segment as of December 31, 1999.
- Automotive:** Principal products shipped include automotive parts, parts for assembly of automobiles. Principal customers are Chrysler de México, S.A. de C.V., ("Chrysler"), Ford Motor Co., S.A. de C.V. ("Ford"), General Motors de México, S.A. de C.V. ("GM"), and Nissan Mexicana, S.A. de C.V. ("Nissan"). Imported automotive parts represent approximately 50% of the market in Mexico and Ferromex serves approximately one-third of the transport in this segment, which is also served by autotransport (trucks). Transport of automobiles for import and export is by railroad exclusively, and Ferromex has approximately 20% of this market. Auto parts of domestic manufacture are transported predominantly by truck. In this segment, on-time deliveries and specialized services rendered are critical success issues for this market and contribute to define competitive advantage. As a result, tariffs are significantly higher than in other segments. The four largest customers of this segment represent 100% of the total revenues of this segment, as of December 31, 1999.
- Fertilizers:** This segment includes transport of both finished products and raw materials for the manufacturing of fertilizers. Principal products moved are ammonium nitrate, ammonium sulphate, urea, phosphates, ammoniac, and sulphur. Principal customers are Agro Industrias del Balsas, S.A. de C.V., Finagro, S.A. de C.V., Fertilizantes Tepeyac, S.A. de C.V., Agrofermex de Occidente, S.A. de C.V., Agrogen, S.A. de C.V., and Fertirey, S.A. de C.V. The three principal customers of this segment represent approximately 51% of the total revenues of this segment, as of December 31, 1999.
- Others:** This segment represents primarily interline fees paid and charged by other railroads for the inclusion of their cars from their system to Ferromex's route system or vice-versa.
- Passenger Services:** Under the Ojinaga-Topolobampo concession, Ferromex has the licence to transport passengers along that route. In consideration for this service the SCT pays Ferromex an annual subsidy, the amount of which is determined in advance each year and is subject to annual approval by the Mexican Congress. The subsidy is based on the estimated costs for providing the service, including : depreciation, maintenance, variable costs such as fuel, train crew expenses and indirect cost equivalent to 20% of the direct costs incurred on the service and applicable tariffs and discounts. The

amount of the subsidy for 1999 was \$ 8.8 million. The subsidy may be eliminated if the SCT determines that these services are no longer required in such communities because of existing better transport alternatives or when the tariff is sufficient for the Licencee to cover its costs.

Ferromex also operates a passenger line between Guadalajara and Tequila in the Guadalajara division. This passenger line has a limited schedule line which operates on week-ends only and serves as a tourist attraction for persons visiting Guadalajara. The service includes a bar-car that is in service during the approximately two-hour trip each way.

e) ***Applicable Legislation and Fiscal Scope/Tax Environment***

Mining Division

The principal laws, regulations and provisions that govern the mining segment of the business, as well as the mining operations are as follows:

- *Article 27 of the Political Constitution of the United States of Mexico*, that in Section 1 decrees that only Mexican nationals born in Mexico or naturalized and Mexican companies have the right to acquire land, bodies of water and their access or to obtain concessions for the exploitation of mines or waters;
- *Mining Law*, that regulates the exploration and exploitation of, and the benefits from minerals or substances in breccias, veins, masses or stratum that constitute deposits whose nature is different from that of the components of the land, as well as the proceedings of assignment and maintenance of the concessions that are bestowed upon mining companies interested in participating in the exploration and exploitation of mineral deposits;
- *Regulation of the Mining Law; and*
- *Concessions granted by SECOFI to Subsidiaries of GMEXICO* that are constitutive instruments of the rights to explore or exploit mines.

General Matters of the Regulatory Framework

The minerals and substances subject to the aforesaid regulatory frame are:

I. Minerals or substances of industrial use that contain antimony, arsenic, beryllium, bismuth, cadmium, caesium, cobalt, copper, chrome, scandium, tin, gallium, germanium, hafnium, iron, indium, iridium, lithium, manganese, mercury, molybdenum, niobium, nickel, gold, osmium, palladium, silver, platinum, lead, rhenium, rhodium, selenium, tantalum, tellurium, titanium, tungsten, vanadium or zinc;

II. The following minerals are of industrial use: actinolite, alum, alunite, andalusite, anhydrite, anthophyllite, arfvedsonite, sulfur, beryl, bauxite, boehmite, boracite, borax, brucite, caralite, celestite, cyanite, colemanite, cordierite, cheysolite, quartz, diaspore, dolomite, epsomite, strontionite, phlogopite, fluorite, graphite, garnet, hydromagnesite, howlite, kainite, kermesite, kieserite, magnesite, mirabilite, moscovite, sodium nitrate, pyrophyllite, polyhalite, pricelite, chialtolite, sepiolite, sillimanite, sylvite, sussexia, talc, tachhydrite, thenardite, tremolite, trona, ulexite, vermiculite, vivianite, witherite, wollastonite, gypsum, and zircon;

III. Rare soils:

IV. Mineral gems ;

V. Gem salt, such as those salts and products obtained from saline formation directly from waters that are presently seas, surface or subterranean, natural or man-made bodies of water.

VI. Products derived from the decomposition of rocks whose exploitation is done by subterranean works, such as kaolin and montmorillonites as well as from quartz sands, feldspars, and plagioclases.

VII. Mineral or organic materials that can be used as fertilizers: apatite, colophane, phosphorite, phosphoserite, francolite, variscite, wavellite, and guano;

VIII. Solid combustible materials: anthracite, coal, lignite and peat.

The Mining Law is not applicable to petroleum hydrogene, solid, liquid or gas substances contained in suspension or dissolution by subterranean waters, whenever they do not come from a mineral deposit different from the components of the terrain; rocks, or decomposed products that can be solely utilized for the fabrication of construction materials or those destined to this end, products derived from the decomposition of rocks, whose exploitation is realized by means of open pits, and salt that comes from on-land water deposits.

Under the Mining Law, mineral resources are the property of the Mexican nation and a concession granted by the Mexican Federal Government is required to explore and exploit ore reserves. The current Mining Law was enacted in 1992, simplifying procedures to obtain mining concessions, extending the life of exploitation concessions from 25 to 50 years and eliminating the restriction of a maximum participation of nationals in the concession, which had previously permitted a maximum of 49% of non-Mexican interest in a concession. Certain taxes previously applicable to mining revenues have been eliminated.

Mining concessions are granted either for the exploration or exploitation of mines. An exploration concession permits the concessionaire to explore for or exploit ore resources on a specified claim for a non-renewable period of six years - beginning on the date of registration at the Mining Public Registry - and it confers pre-emptive rights in seeking an exploitation concession for the same claim in case the concessionaire has not incurred in a fault causing cancellation and when the concessionaire files the application before the termination of the concession. A concession for exploitation allows the concessionaire to extract specific minerals for a specific application for a period of 50 years, renewable, the same to be extended once or more times for an equal term if the holder has not been subject to cancellation and if it is applied for 5 years prior to the expiration date of the concession, under the agreement that the concessionaire pay a nominal fee and complies with the exploitation program that must be filed with SECOFI.

The holders of exploration and exploitation concessions, independent of the date of the grant, are obligated among other duties, to: (i) execute and prove respectively, the works and labors of exploration or exploitation in the terms and conditions established by the Mining Law and its Regulation; (ii) pay for the mining rights as established by law; (iii) abide by the general dispositions and specific technical standards applied to the mining and metallurgical industry in terms of security in the mines, ecological balance and protection of the environment; (iv) file with SECOFI the technical statistical and accounting reports in the terms and conditions required by the Regulations of the Mining Law.

The concessionaire is normally the owner of the property approved by the concession, though it is not necessary to detain the ownership to operate a concession, however the concessionaire shall be owner of the equipment used for processing the minerals.

SECOFI is the principal regulatory authority of mines in Mexico and is authorized by the Mining Law to undertake among others, the following functions: (i) regulate and promote exploration and exploitation, as well as the rational use of and preservation of the minerals of the Nation; (ii) grant concession titles and mine assignments, as well as resolving cessation, cancellation or suspension and withdrawal of rights awarded through the concessions; (iii) verify the fulfillment of rights and obligations established by the Mining Law to those who carry out the exploration and exploitation or receive the benefits of the minerals or substances concessioned, and impose administrative sanctions derived from the enforcement of the Mining Law. To promote the best use of the mineral resources of the Nation, SECOFI is supported by the Mineral Resource Advisory Committee (Consejo de Recursos Minerales).

The precedent condition of the hearing guarantee on behalf of the concessionaire, who has a period of 60 calendar days to represent on what he deems necessary according to law and pursuant to the foreseen assumptions on the part of the Mining Law, SECOFI can void or cancel the concession, suspend all rights to perform projects or works of exploration or exploitation, as well as to reverse the expropriated assets and the unsubstantiality of the resolutions of temporary occupation or the constitution of easement related to the concession.

Mining concessions can be terminated if, among other causes, minerals other than those permitted by the concession are exploited or if the concessionaire does not fulfill his obligations as charged. The grant of a mining concession will only be effective if said assignment is registered with the Public Registry of Mining.

The rights of the subsidiaries of GMEXICO to explore and exploit mines are derived from concessions granted by SECOFI pursuant to the Mining Law and its Regulations. Concessions for exploration and exploitation of those

that are the titled subsidiary concessionaires of GMEXICO are permitted, during the concession period to: (i) perform, respectively, projects and works of exploration or exploitation within the mining lots that are so designated; (ii) make use of all of the minerals that are obtained from said lots within the purposes of the projects and works that are developed during its term of validity; (iii) make use of the lands that are found within the limits so established unless they are covered by another mining concession that is in force; (iv) obtain the expropriation, be it territorial occupation or constitution of easement to indispensable lands to accomplish explorative, exploitative, and beneficial projects or works, as well as a deposit for earth, tailings, slag, and dross; (v) take advantage of water from the mines for their exploration or exploitation, and for the domestic use of employees of these mines; (vi) obtain pre-emptive rights on concession for the water from the mines for any use different from those mentioned; (vii) transmit their license or rights to persons with legal capacity to obtain them; (viii) reduce, divide, and identify the area of the lots under their control, or join them with other bordering concessions; (ix) give up the concessions and the rights pertaining to them; (x) group two or more of them for the purpose of verifying exploration and exploitation projects and works and render reports on statistics, techniques, and accounting; (xi) solicit administrative corrections or duplications of their licenses and (xii) substitute the exploration concessions for one or more exploitation concessions and obtain an extension of the latter for an equal period of enforcement.

Railroad Division

The principal laws, regulations and dispositions that regulate the railroad industry are mentioned as follows:

- *Article 28 of the Constitution of the United States of Mexico;*
- *The Railroad Law*, that regulates the construction, operation, exploitation, preservation and maintenance of railroads when they are general means of communication, as well as public service railroad transport which operates on them, and their auxiliary services.
- *The Railroad Service Regulations*
- *The General Means of Communication Law*, whose dispositions are applicable to railroads, for the lack of specific dispositions in the Regulatory Law for Railroad Service.
- *The General Law of National Assets*, which regulates that related to the use, utilization, and exploitation of public assets that are assigned for the use of railroad services.
- *Concessions granted by the SCT to Ferromex*, that are constitutive documents of the rights to construct, operate and exploit railroads when they are general means of communication.

General Matters of the Regulatory Framework

The railroad is a priority economic activity which therefor, relies on the Mexican Government for the promotion of the development of railroad service in conditions that guarantee free enterprise among the different means of transportation.

The Railroad Law and its Regulations establish the general legal scope for the construction, operation, exploitation, conservation, and maintenance of the railroad when they are considered means of general communication, as well as the public service of railroad transport and auxiliary services that operate on them. Pursuant to the aforesaid dispositions, the railroads are considered general means of communications when: (i) they communicate between two or more federal entities; (ii) in all or part of the route that is found within 100 kilometers of the border zone or in the strip of 50 kilometers along the coasts, with the exception of urban lines that do not cross the dividing line with another country and do not operate outside of the limits of said urban areas; (iii) they link or connect with another railroad whose characteristics are considered a general means of communication; whenever they render service to the public. Urban lines that do not cross the dividing line with another country are not considered general means of communication. Rights of trackage, traffic control centers, and railroad signaling operations are considered part of a general mean of railroad communication. Both general railroad communication routes and public railroad transport service that operates on it and its auxiliary services are under federal jurisdiction, thereby federal courts have venue on any controversy arising from the application of the legal framework and have adequate faculties to provide what is needed so that the rendering of the railroad transport service is not interrupted.

The Railroad Law and the Railroad Service Regulation classify the public railroad service in two sections:

- *Public Railroad Passenger Transport Service.* The public railroad passenger transport service, in charge of operating functions and service quality, as well as territorial matters, is classified in the following categories: (i) standard, that which is subject to a schedule and itinerary that must be registered before the SCT and announcements thereof should be placed in the stations a few days prior to their effective date. In turn, this kind of service is divided into urban, suburban and interurban; (ii) special, that in which the schedule, itinerary and stops are individually determined, and divided into tourist or private service.
- *Public Railroad Freight Transport Service.* That through which transport of any kind of goods is performed. The SCT regulates the transport of materials, residuals, and hazardous waste that are carried on the railroads. In order to render this service, the renderers must keep a record of the cargo applications filed, registering the applicant's name and the date the application was filed, and the renderers will be liable for such cargo, except for the cases expressly described in the "Ley Reglamentaria del Servicio Ferroviario" (Railroad Service Regulatory Law). The cargo transport service will be rendered within standard and specialized categories, which in turn will be classified according to the train characteristics, and the kind of service to be rendered. The SCT has capacity to establish applicable standards to the different classes of cargo services.

Under the terms of the Railroad Service Regulatory Law, a concession is required in order to construct, operate and exploit a general railroad communications route, as well as to render the railroad public transport service for passengers and freight. A concession is generally granted through a public auction, except in the case of states, municipalities and government companies of the Federal Public Administration, to whom a concession is assigned.

The SCT is the principal regulatory authority of the railroad system in Mexico and it has capacity, granted by the Railroad Law to undertake, among others, the following functions: (i) planning, formulating and conducting policies and programs, as well as regulating the development of the railroad system; (ii) granting, inspecting fulfillment thereof, modifying or terminating concessions and permits referred to in the Railroad Law; (iii) determining the technical characteristics and specifications of the railroad lines for the railroad public transport service and of its auxiliary services through the issuance of official Mexican standards; setting forth the basis of tariff regulation; (v) impose sanctions amounting up to 25,000 minimum wages for non-compliance of and non-application of the provisions of the Railroad Law and its Regulations and (vi) integrate the registry of concessions and permits granted according to the Railroad Law.

Concessions are granted for a period of 50 years and may be extended, one or more times, for a term not exceeding 50 years, provided that the concessionaire: (i) had complied with the conditions provided in the concession that is to be extended; (ii) files the petition before the beginning of the last tenth part of the term of the concession; (iii) accepts the new conditions set forth for the concession; and (iv) had improved the facilities and the quality of the services rendered during the term of the concession, and according to the systematic inspections practiced pursuant to the efficiency and security standards determined by the Railroad Service Regulations and other applicable provisions.

The general railroad communications routes at all times are maintained within the publicly-owned property of the Federal Government; the railroad lines constructed under the protection of a concession grant, immediately become part of the publicly-owned property, independent of the conditions and term of the concession.

With the prior authorization of the SCT, concessionaires may constitute liens on the rights derived from a concession, although under no circumstance may the publicly-owned property, object of the concession, be encumbered, therefore, in case of the execution of a collateral, under no circumstance the capacity of the concessionaire will be granted to the creditor or to a third recipient. Likewise, with the prior authorization thereof, concession rights and obligations may be entirely or partially assigned, provided that the assignee commits himself to comply with the pending obligations and accepts the conditions thereto established by the SCT, in the understanding that the concessionaires in no case will be able in any way to assign, encumber, transfer or dispose of the concession, the rights conferred by the same, as well as the properties subject to the concession, to any foreign government or state.

Pursuant to the Railroad Law, in the event of an emergency threatening internal peace or national security, the competent authorities will be directly in charge of surveillance in order to preserve the security of the passengers, of the general railroad communications route, of the railroad services, of the cargo, of the auxiliary service facilities and of the railroad equipment. Except in the situations aforesaid, surveillance is under the responsibility of the concessionaire and it must be carried out pursuant to provisions applicable to this subject matter and the standards

thereto established by the SCT. Thereby, the concessionaires will have the obligation to contract insurance policies (and to maintain them in effect) to cover entire or partial damages in case of theft or accident for any reason whatsoever, including an act of God or force majeure.

The Railroad Service Regulatory Law provides that railroad carriers are free to set their maximum tariff based on operating or financial factors deemed relevant, subject only to the following: (i) the tariffs must be established according to the freight product segment to be transported; (ii) the tariffs must be representative of maximum rates and be registered with the SCT at least ten business days prior to going into effect; (iii) the tariffs must be implemented on a non-discriminatory basis and equally to all customers; and (iv) if the SCT, jointly with the CFC, find that a tariff is anti-competitive if it is the only transportation alternative available or economically feasible for the costumer; or if there are no alternative routes available or substitutes for shipment of the product, the SCT may impose a regulated tariff rate. As of this date the SCT has not imposed a regulated tariff rate for the rendering of freight transport service.

Concessions granted by the SCT will be deemed terminated, for any of the following: (i) expiration of the term provided; (ii) waiver of the holder; (iii) if the concession is revoked by the SCT; (iv) rescue of publicly-owned properties object of the concession; (v) disappearance of the object of the concession; or (vi) liquidation or bankruptcy of the concessionaire. The concession's termination does not extinguish the liabilities assumed by the concessionaire while it was in effect. The rail tracks, railroads, trackage rights, traffic control centers, railroad signaling operations, and other properties that had been concessioned will be reversed in favor of the Nation in good operating conditions in accordance with the respective official standards at no cost to the Federal Government, and the Federal Government shall have pre-emptive rights to acquire railroad equipment and other goods it deems necessary to continue rendering the service. In the aforementioned assumptions in sections II and V, the SCT will solely revoke the concession if the concessionaire has been sanctioned on a minimum of three occasions for the reasons provided in the same paragraph and in paragraphs III, IV, VIII and IX, on a minimum of five occasions.

The Railroad Law establishes that railroad concessions will only be granted to Mexican legal persons and foreign investment can only have up to 49% interest in the stock capital of the licensee company.

The SCT may revoke the concession granted due to the concessionaire's: (i) failure to exercise the rights conferred in the Concession for a period of more than 180 calendar days from the date of the grant of the Concession, (ii) interruption of the railroad operation or the rendering of railroad public transport services, entirely or partially, without a justified cause vis-à-vis the Secretariat; (iii) actions or omissions that impeach or tend to impeach other concessionaires' or licensees actions to which they are entitled; (iv) non-payment of indemnities for damages caused by the services rendered; (v) application of tariffs higher than those registered or approved; (vi) change of nationality; (vii) assignment, assessment, or transfer of concession or rights thereby conferred or the properties related thereto against the provisions of the Railroad Service Regulatory Law; (viii) non-providing or maintaining in effect a performance bond guaranteeing the fulfillment of the terms of the concession, or the liability insurance policies covering damage to passengers and third parties, in the form of personal injury or property loss, and damage to constructions, facilities, as well as tractive equipment; (ix) breaching of any of the obligations or conditions established by the Railroad Service Regulatory Law, its regulations and the concession agreement. The SCT may revoke a concession ipso facto as a result of any of the causes described in paragraphs i, vi, and vii above.

In the event that a natural disaster, war, significant public disturbance or imminent threats for the national security, internal peace or national economy are foreseen, the Mexican Federal Government may temporarily seize the general railroad communication routes, the railroad equipment, the auxiliary services and all other goods and properties thereof, and to dispose of items as considered convenient, as established by the Railroad Law. Likewise, the Mexican Federal Government will be able to use the staff services of the seized route when deemed necessary. The seizure will be maintained as long as the relevant conditions prevail. Except in the case of war, the Mexican Federal Government shall indemnify the concessionaires, paying damage and loss suffered at fair value. In the event of disagreement on the indemnity sum, the damages will be set by experts appointed by both parties, and with respect to loss, the average net income of the year prior to the seizure will be the basis of the evaluation. Each party will cover half of the expenses derived from the fees of the experts.

Ferromex's rights to operate and exploit the railroad routes are derived from a concession granted on June 22, 1997 by the SCT to FPN (today Ferromex), through a public auction procedure held under the terms of Railroad Service Regulatory Law. The object of the concession was the use, operation and exploitation of the general railroad communication line corresponding to the Pacifico Norte (North Pacific) trunk line and includes the rendering of public freight transportation services and the use, management and exploitation of publicly-owned properties which are described in the concession agreement, same that permits Ferromex, in addition to all matters aforementioned, to

render auxiliary services through traffic control centers, freight transfer yards, railroad equipment supply centers, maintenance workshops and transfers and decanting.

Under the Federal Duty Law, Ferromex must pay the Mexican Federal Government a right of usage contribution on the concessioned assets calculated on an annual gross income basis earned from the use, operation, exploitation of the publicly-owned assets. At present this contribution is 5% and it can be changed annually by the Congress of the Union.

Notwithstanding that the corporate by-laws of GMEXICO actually provide a limit with respect to the foreign investment in its capital stock, on July 19, 1999 a request was filed before the Foreign Investment National Commission in order for the foreign investment majority participate in its capital stock. By means of writ number 514.113.00-17880 dated September 17, 1999 the Foreign Investment National Commission issued the corresponding authorization. Based on the above is the intention of GMEXICO to, in the next shareholders meeting amend the corresponding article of the corporate by-laws.

De-regulation

The Railroad Service Regulatory Law as published in May 1995. Pursuant to Article 46 of said law and to the Railroad Service policies, railroad freight carriers are free to set their maximum tariffs based on relevant operating or financial factors, subject only to the following: (i) tariffs must be established according to the freight product segment to be transported; (ii) tariffs must represent maximum rates and be registered with the SCT at least ten working days prior to becoming effective; (iii) tariffs must be implemented on a non-discriminatory basis and equally to all customers; and (iv) the SCT, in conjunction with the Federal Competency Commission (Comisión Federal de Competencia) may find that a tariff is anti-competitive if: a) it is the only transport alternative available or economically feasible for the customer; and b) there are no alternative routes available or substitutes for shipment of the product.

Ferromex sets its tariff rates based on operating costs plus a margin. The rates registered with the SCT are maximum rates. Ferromex is free to negotiate the size of any discounts offered to reflect such factors as distance between origin and destination, volume shippers, value added cargo, route section, customer-supplied cars, specialized services and cargo delivery on time. Ferromex applies the policy of increasing its tariffs at the same pace as the inflation index in Mexico. After the artificially low tariffs maintained during the period of government control, Ferromex believes that railroad customers are, in general, accepting of rate increases higher than those to which they were used to prior to 1998 because of the service and equipment improvements achieved by carriers in Mexico. Ferromex may change its tariff rates registered with the SCT at any moment, in one or several of the product segments. Ferromex promotes tariff negotiations in dollars, particularly in intermodal and automotive freight segments, which would permit price adjustments in accordance with United States Consumers Price Index.

Environmental Matters

The operations of GMEXICO's subsidiaries, both from the mining and the railroad sectors, are subject to Mexican federal, state and municipal environmental laws, to Mexican Official Standards, and to regulations for the protection of the environment, including regulations related to water supply, water pollution, air pollution, noise pollution, hazardous wastes and their transportation and soil pollution.

The principal applicable legislation in the federal scope is the Environmental Law. Enforceability of the Environmental Law is entrusted to the SEMANARP, through the INE and the PROFEPA. PROFEPA monitors compliance with the environmental law and enforces Mexican environmental laws, regulations and standards. PROFEPA has capacity to bring administrative and criminal proceedings against companies that breach environmental laws, and it also has power to close non-complying companies, to revoke operating licenses required to operate such facilities and to impose sanctions and fines to such companies.

The operations of GMEXICO's subsidiaries located near the U.S.-Mexican border are also regulated by the La Paz Agreement on the Cooperation for the Protection and Improvement of the Environment, which was executed in 1983 between the United States of America and Mexico. The La Paz Agreement has the purpose of improving air quality in the border area and establishes sulfur dioxide emission standards and requires installation and maintenance of emission monitoring and record-keeping systems at the smelters. Mexican environmental regulations have become increasingly stringent over the last decade, and this trend is likely to continue and may be influenced by the

environmental agreement entered into by Mexico, The United States and Canada in connection with NAFTA. In order to maintain compliance with sulfur dioxide emission standards promulgated by the Environmental Law and the La Paz Agreement, the Cananea smelter was shut down, and GMEXICO intends to phase out its smelting operation in the San Luis Potosi plant by the year 2004 and to consolidate those refining and smelting operations at La Caridad. In addition, mining facilities have implemented several environmental conservation programs, which include water recovery systems to conserve water and minimize contamination of nearby streams, revegetation programs to stabilize the surfaces of the tailing dumps and the implementation of flotation technology in the mines to reduce dust emissions.

The concessions that Ferromex obtained from the Mexican Federal Government to operate the Pacifico Norte and the Cihuihuahua-Pacifico (Ojinaga - Topolobampo) railroad lines contain an agreement regarding the responsibilities of the Mexican Federal Government and Ferromex on environmental issues which establishes the restoration of soils, subsoil, and aquifers polluted by FNM operations prior to the delivery of the facilities, will be assumed by the Mexican Federal Government, in the understanding that upon delivery of the facilities to Ferromex and with a grace period of 90 days, the latter will assume the commitment to abstain from continuing to contaminate such soils and aquifers. Therefore Ferromex shall only be liable for ecological and environmental damages that may arise after the conclusion of the delivery-receipt act referred to in the concession, as a result of its acts or omissions in terms of the applicable laws and provisions on the subject matter. Likewise, Ferromex will be responsible for the amendments, modifications and surface and infrastructure works at the supply centers and workshops it operates, and which may be enforceable pursuant to the applicable provisions. As a supplement to the environmental agreements of the concessions and to fulfill the plans of action derived from environmental audits made with respect to locomotive workshops, work centers and storage centers, Ferromex has executed 19 (nineteen) cooperation agreements with PROFEPA.

GMEXICO's Management does not believe that continued compliance with the Environmental Law or Mexican state environmental laws will have an adverse material effect on the business, properties, operating results, financial condition or prospects of GMEXICO and its subsidiaries or that it will result in material capital expenditures. Nevertheless, although GMEXICO believes that all of its facilities are in material compliance with applicable environmental, mining, railroad and other laws and regulations, there can be no assurance that stricter enforcement of existing laws and regulations or the adoption of additional laws and/or regulations will not have a material effect on GMEXICO's businesses, properties, operating results, financial condition or prospects.

Environmental provisions that regulate the mining operations undertaken by GMEXICO in the United States of America through Asarco have been modified in a significant manner and have become increasingly stringent in the recent years. This is why in the history of this subsidiary, that can be traced back almost 100 years, the environmental issues related to smelters and refineries that have been operated (resources and even definite plant shut-downs) have traditionally been very actively negotiated and legally promoted. As of December 31, 1999, and at the end of June 30, 2000, Asarco had the necessary allowances to cover possible environmental liabilities required by the environmental authorities in the United States of America. See *"Litigation in the U.S.A.-Litigation in Environment and Related Matters."*

Mining operations in Peru are subject to environmental laws and regulations of that country. SPCC has an administrative program in that country for the fulfillment of the environmental regulations (the "PAMA"), which was established in January, 1997 and whose main objective is to fulfill the environmental regulations. This program establishes the necessary capital expenditure commitments in order to comply with the various requirements for maximum permissible emissions, as well as waste disposal. Said plan covers a 5-year period, with the exception of the environmental controls of the copper smelter, which are subject to a 10-year period, during which the commitment of updating the smelter by setting up necessary emission monitoring to comply with the parameters established in the environmental regulations is required.

Fiscal Scope

• MEXICO

GMEXICO's subsidiaries established in Mexico are subject to income and asset taxes (ISR and IMPAC, respectively). Income taxes are computed taking into consideration the taxable and deductible effects of inflation, such as depreciation calculated on constant price values and the deduction of purchases instead of cost of sales, which permit the deduction of current costs and taxable income is increased or reduced by the effects of inflation on certain monetary assets and liabilities through the inflationary component, which is similar to the gain or loss from monetary position. Income taxes are calculated in terms of Mexican pesos against the currency when the transaction occurred

and not in terms of Mexican pesos as of the end of the period. Beginning in 1999, the income tax rate increased from 34% to 35% with the obligation to pay this tax each year at a 30% rate (provisionally 32% in 1999), with the balance payable upon the distribution of earnings.

On the other hand, GMEXICO is subject to asset taxes at an annual rate of 1.8% on the net average of the majority of restated assets (at current values) and of certain liabilities which are paid only to the extent it exceeds the income taxes of the year. Any required payment of asset taxes is creditable against the excess of income taxes over asset taxes of the preceeding three and subsequent ten years.

GMEXICO and its Mexican subsidiaries are authorized to file an Income and Asset Consolidated Tax Return. The employees profit-sharing is computed on the individual results of each and every one of the Mexican subsidiary companies.

The employees profit-sharing does not consider the inflationary component, the gain or loss of changes unearned, nor the fiscal depreciation, which is computed at historical values, not at restated values.

Consequently, the revolving temporary differences of Mexican companies do not result in income tax recognition and employees profit-sharing, will represent a Ps. 181.0 cumulative item to be reversed. This sum does not include items caused by the differences between the book and fiscal value of properties and equipment and inventories that amount to Ps.13,513.3 and Ps.3,103.6 million, respectively exceeding the book value over the fiscal for ISR purposes.

In 1997 and 1996 certain subsidiaries adhere to the benefit of the ARE (Alliance for Economic Recovery) program whereby they were exempted from the payment of several federal taxes. This program also granted tax incentives to tax payers with certain characteristics, which the companies satisfied, resulting in a deduction in its taxable income and in the asset tax basis. In 1999 a portion of these benefits balance was applied against the asset tax basis in the amount of Ps.148.8 million which is reflected on the provision for that year. These benefits will reverse in the future to the extent to which book depreciation of fixed assets is recognized in the taxable income. As of December 31, 1999, there is a balance to be applied against the IMPAC in the next three years in the amount of Ps. 58.6 million.

Material items that affected the determination of the taxable income from Mexican subsidiaries are related to the difference between purchases and cost of sales, to the recognition of the inflation effects on depreciation, and on monetary assets and liabilities through the inflationary component, which differ from accounting and fiscal purposes.

- **USA**

As of December 31, 1999, Asarco had U.S. 805.8 million of fiscal loss to be amortized, which will be due between 2008 and 2019 if not applied. The tax loss to be amortized can only be used by Asarco but not by SPCC.

Likewise, as of December 31, 1999, Asarco had tax credits from abroad to be carryforward against the American income revenue it causes in the future, which amount up to approximately U.S.\$ 29.6 million (only available for SPCC) which will be due between 2000 and 2004. Considering that both the maturing dates and the regulations that establish the order in which such credits will be applied, it is not likely that these foreign tax credits amortizations will be used.

- **PERU**

Southern Peru Copper Corporation is a company incorporated under the laws of the State of Delaware in the United States of America and it conducts its mining operations in Peru through a Branch, under the same name or under SPCC.

SPCC mining operations in Peru are subject to Peruvian tax legislation, nonetheless, in consideration of an American company, all the taxable income are consolidated and submitted to the American tax legislation and therefore, taxes paid in Peru can be offset against those caused in the United States. The main differences in the tax systems between the United States and Peru refer basically to the corporate tax rate generated in the United States which is 35% compared to 30% in Peru, plus some tax benefits such as profit reinvestments that are granted in Peru for fomenting productive investment.

f) Human resources

Mining Division

As of June 30, 2000 and December 31, 1999, GMEXICO had 20,275 and 21,741 employees, respectively, in its mining operations in Mexico, the United States and Peru. 11,797 were working in the mining units and metallurgic plants in Mexico at the end of 1999, and 5,571 in the mining units and the metallurgic plants in the United States, 3,891 in the mining units and metallurgic plants in Peru, and 482 in the main offices. The size of GMEXICO's workforce has been generally stable since 1994, except in 1999 when it was increased by 34.8% as a result of the acquisition of Asarco. GMEXICO has usually negotiated workforce reductions with representatives of the labor union in exchange for severance compensations. As a result of an illegal stoppage from November 19, 1998 to February 9, 1999 at the Cananea mine, the Cananea Unit dismissed approximately 1000 union and non-union workers during the months of February, March, and April 1999.

On April 27, 2000, approximately 458 members of the Union went on strike at the Taxco, Guerrero mine, as a result of a disagreement on the raise tabulators that would be in effect in the year 2000. This strike was resolved on June 3, 2000, through a 14% salary raise agreement with the Union. The Taxco mine represents 0.82% of GMEXICO's total mining production.

GMEXICO has undertaken a number of measures to improve labor productivity at its facilities, including simplification of job categories, increased flexibility and the establishment of workers' productivity incentives.

Approximately 54% of the workforce as of December 31, 1999 were members of the Union. Under Mexican law, the terms and conditions of employment for unionized workers are set forth in collective bargaining agreements. Mexican companies negotiate the salary provisions of collective bargaining agreements with labor unions annually and negotiate other benefits every two years. GMEXICO conducts negotiations separately at each mining complex and each plant.

GMEXICO has occasionally experienced labor unrest that has affected its operations, but management considers its present relations with its employees as good, due in part to the Union's minority interest in the capital stock of some of GMEXICO's subsidiaries.

Mexcobre has only had two strikes, both prior to GMEXICO's acquisition of a majority interest in its capital stock. Immsa experienced an 80-day strike at the San Luis Potosí zinc refinery in 1992, and a 50-day general work stoppage at the Santa Bárbara mine in the same year. Until 1999, Mexcananea had experienced three labor strikes, the first a 45-day strike at the Cananea concentrator in 1991; the second an 11-day general work stoppage in 1995; and, the third was a n 82-day strike at the end of 1998 and in the beginning of 1999. On November 19, 1998, workers at the Cananea mine declared an illegal strike that suspended operations until February 13, 1999. As a result, GMEXICO decided to accelerate the closure of the Cananea copper smelter and the confinement of tailing dumps (mineral debris from the concentrator). The confinement of the dumps was also unnecessary, because GMEXICO had completed the construction of the tailings dam and transferred the operation of water services to the local authorities. The strike was resolved in proceedings before the Mexican Ministry of Labor and Social Protection by an award that provided for the closing of the facilities and severance of approximately 1,000 union and non-union employees and that reaffirmed the productivity agreements previously executed. See *"Management's Coments and Discussions on GMEXICO's Financial Condition and Operating Results - Operating Results in 1999, 1998, and 1997 - Unusual Charges and Plant Closure Write-Down"*

Employees of the Mexcobre and Cananea Units live in towns located at La Caridad and Cananea, respectively, where GMEXICO has built approximately 2,000 houses and apartments and 300 houses and appartments, respectively. Employees of the Immsa Unit live on the grounds of the mining or processing complexes in which they work, and GMEXICO has built approximately 900 houses and appartments for such employees. Housing, together with maintenance and utility services, is provided at minimal cost to most of GMEXICO's employees. GMEXICO's town sites and housing complexes include educational, and, in some units, medical facilities, churches, social clubs, shopping, banking and other services. At the Cananea Unit, health care is provided free of charge to employees and their families.

Railroad Division

On December 31, 1998, Ferromex had 8,722 employees and 8,666 on December 31, 1999, of which 6,906 and 6,909, respectively, were union-member employees, and 1,816 and 1,757, respectively, were non-union staff members.

Ferromex started an aggressive renovation process in order to be established as a highly competitive world class company. As part of the process, Ferromex made an agreement with the Union of Railroad Workers, at the commencement of the operations, on the basis of a new collective work agreement which included Modernization and Productivity Covenants. The organizational structure, operating and management procedures were defined in 1998, and this permitted an adequate integration of its workforce.

g) Market Information and Competitive Advantage

1. General

Mining Division:

Updating of mining and processing facilities: Since 1992 GMEXICO has invested over Ps.12,393.2 million in capital projects designed to update GMEXICO's facilities in Mexico, increase its productivity and improve the quality of its metallic products. These investments include upgrading stripping equipment at the Cananea mine, upgrading and expanding the concentrator and smelter at La Caridad and constructing state-of-the-art copper and precious metals refineries as well as a copper rod plant at La Caridad, which permitted GMEXICO to close the Cananea smelter at the end of 1998 without reducing the volume of copper produced. In addition, GMEXICO has developed modern SX-EW facilities at both La Caridad and Cananea, enabling GMEXICO to use leachable ore that otherwise would be wasted and to reduce significantly its average costs of copper production. GMEXICO's SX-EW facilities, as well as its zinc refinery at San Luis Potosí, have received ISO 9002 certification from the International Standards Organization. GMEXICO has also invested in advanced information technology to improve production process monitoring and in communication equipment to link its operations. At the Immsa Unit, GMEXICO plans to build a new zinc refinery in order to refine all of its own production of zinc concentrates and to update its underground mines. At the Cananea Unit, GMEXICO plans to expand its SX-EW processing capacity in order to increase value added and reduce unitary costs. With respect to the projected investment in Asarco, the most important investment is located at SPCC, at which it is planned to update the smelting process with the purpose of increasing its production capacity and at the same time comply with Peruvian environmental requirements, as well as to expand its Toquepala mining unit.

Improved operating efficiency through lower consumption of energy, water and supplies: In recent years, GMEXICO has attained significant operating abilities in its mining units and metallurgical plants through new technology that permits lower energy, water and supply consumption. GMEXICO built a natural-gas pipeline which began in May 1999, to provide Mexcobre Unit with a cleaner and cheaper source of energy. In addition, GMEXICO has installed "expert" computer monitoring systems that improve productivity by coordinating inflows and optimizing the use of energy, water, and spare parts. GMEXICO will continue to seek ways of improving its operating efficiency, particularly by exploring different alternatives to produce or acquire energy at a lower cost.

As part of its vertical integration strategy, GMEXICO has expanded the capacity of Mexcobre's low-cost smelter from 180,000 to 360,000 metric tons of copper per year in order to consolidate GMEXICO's copper processing capacity at La Caridad. In addition, GMEXICO constructed a new copper refinery at La Caridad, which is operating at a capacity of 300,000 metric tons per year, and a copper rod plant. Likewise, GMEXICO constructed a precious metals refinery as part of the same complex. These facilities have allowed GMEXICO to sell predominantly refined products and to realize additional margins associated with sales of high grade refined metals. GMEXICO will continue to seek opportunities for vertical integration in copper, zinc, gold, silver and coal.

GMEXICO seeks to remain Mexico's leading supplier of copper and zinc, while strengthening its market share in the United States, Europe, and Asia. In addition, GMEXICO seeks to expand its customer base by increasing its sales of high quality refined metals to end-users and providing specialized products and services to its customers. Notwithstanding the inherent risk in diversification and the current downward trend in copper prices, GMEXICO considers it is well-situated to continue to expand its sales of the highest quality refined metals to a geographically diverse customer base.

GMEXICO's principal Mexican competitor is Peñoles. GMEXICO intends to diversify the type of costumers and users of its zinc, to include die-casting, bronze mills and galvanizing mills.

The business of mining, smelting and refining of copper, zinc, and other metals is generally subject to a number of risks, including industrial accidents, labor disputes, unusual or unexpected geological conditions, changes in the regulatory scope, environmental hazards, as well as weather and other natural phenomena such as earthquakes. Such events may also result in damages or loss of the mining properties or the production facilities, injury or death of personnel, pollution damage, delays in mining and monetary loss. GMEXICO maintains risk insurances against typical risks in the mining industry in Mexico and in the operations abroad in amounts GMEXICO has generally deemed adequate.

Railroad Division

During 1999, its first complete tax year, Ferromex generated Ps. 5,255.8 million revenues, representing a 19.7% increase mostly due to the higher volume freight carried, which was of 32.6 million tons with an average distance of 728 kilometers, which amounted up to 23,703 million ton-kilometer, representing a 24.5% increase compared to the transportation total of the previous tax year. Border and port sites continued to be developed, making important infrastructure investments in order to better service import and export movements. During 1999, approximately U.S.\$ 238 million were invested as part of the five year program for its modernization. The main achievements with respect to the transport area were the following: Placing hot box detectors, end of train devices, and changing springs. A modern transport regulation was implemented, which permitted to reduce the crew number. Progress was made in yard expansion works, mostly in the cities of Manzanillo, Chihuahua, Piedras Negras and Río Escondido. In the infrastructure area, 202 track kilometers were renovated and intensive conservation measures were applied to lines with heavier traffic, 23,835 kilometers of new rails were constructed. 50 new locomotives were acquired with 4,400 horse power each, which permitted to move the cargo in a more efficient way by eliminating back-up machines, which in turn, reduced diesel consumption per ton-kilometer. The number of accidents was significantly reduced. The percentage of ways with precaution orders went from 14.2% in April 1998 to just 7.8% in December 1999.

GFM is continuing to make advances in its operating efficiency given that on June 30, 2000, the index of available locomotives reached 91.7% as a result of programmed maintenance. Moreover, it has continued to reduce the number of total accidents reducing them by 43.1% as compared to 1999. Export volumes for the United States of America have increased compared to the previous year by 19.5% due to improvements on tracks and infrastructure and to the important number of border sites that our railroad line has access to, providing our customers with better planning and shorter distances to be covered giving rise to important savings in time and money to importers and exporters depending on the origin and destination of their merchandise. Moreover, the percentage of precaution orders has decreased by 4.9% as of June 30, 2000, compared to 11.6% as an average for 1999.

The implementation of a modernization program has continued throughout all the railroad routes as agreed upon by the Railroad Union that will allow for better results through the use of better technologies that will promote a more efficient use of human resources and technology with important savings and efficiency.

Ferromex competes with other railroads and truck lines, with TFM as its main competitor, operating the second longest route in Mexico (The Northeast route that runs from Nuevo Laredo, Tamaulipas to Mexico City).

2. *Mining Production Processes*

Open-Pit Mining

In an open pit mine, the production process begins at the mine pit, where waste rock, leachable ore and copper ore are drilled and blasted and then loaded onto diesel-electric trucks by electric shovels. Waste material is hauled to dump areas and leachable ore is hauled to leaching dumps. The ore to be milled is transported to the primary crusher and subsequently to secondary and tertiary crushers, going through a jig system to be selected according to the ore size. The crushed ore is then sent to the concentrator where it is ground and then it undergoes a flotation process through which copper is extracted.

Underground Mining

In an underground mine, the production process begins at the stopes, where gold, silver, copper, zinc, and lead veins are drilled and blasted, extracting the ore which is then extracted and hauled to the underground crusher station. The crushed ore is then sent to the surface to be processed.

Concentrating

The copper ore from the open pit primary crusher of the gold, silver, copper, zinc and lead ore from the underground mines is transported to a secondary and tertiary concentrator plant where a crushing circuit with gyratory crushers breaks the ore into sizes no larger than 3/4 inch. The ore is then sent to a mill section where it is ground to the desired consistency (sand consistency). The finely ground ore is sent to flotation cells where minerals are separated from waste rock. The mineral floats in a froth that carries minerals to the surface of the cells. The froth is skimmed off and filtered to produce concentrates with a metal content of approximately 25% to 30% for copper, or 55% for lead or zinc, with silver and gold associated with the copper, zinc or lead.

Copper Smelting

Copper anodes are transported to a smelter, where they are smelted using a furnace, converter and anode furnace to produce copper, in the converter case with blisters or in the copper anode furnace case without blisters, which is sent to a rolling caster machine. GMEXICO produces copper anodes of 99.6% purity at the La Caridad smelter and copper blisters of 97.4% purity at the San Luis Potosí smelter and copper blister of 98% purity at the Hayden, Arizona smelter and the Ilo smelter in Peru.

Electrolytic Copper Refining

Copper anodes are then sent to an electrolytic refinery where they are treated by electrolysis to produce 99.999% pure copper cathodes. In this process gold and silver are recovered as slimes for further treatment to produce refined silver and gold. GMEXICO produces copper cathodes in its refineries in La Caridad, Amarillo, Texas and at the Ilo plant in Peru.

Copper Rod Production

To produce copper rods, copper cathodes are first liquefied in a furnace and then dosified in a caster machine. The casted copper is then passed through a cooling system that begins solidification of copper into a 60 x 50 mm. copper bar. The resulting copper bar is gradually reduced in a rolling mill to achieve the desired diameter. The rolled bar is then cooled and sprayed with wax as a preserving agent. Rod coils are formed and compacted to be sent to market. GMEXICO's copper rod facilities are located in La Caridad, Sonora and in Amarillo, Texas.

SX-EW Copper Refining

An alternative to the conventional concentrator/smelter/refinery process is the leaching and SX-EX (solvent extraction-electrowinning) process for leachable low-grade ore. In this process ore is treated with a sulfuric acid solution from which copper is recovered by solvent extraction and then by electrowinning to produce 99.999% copper cathodes. GMEXICO has SX-EW facilities at the Cananea, La Caridad, Toquepala, Ray and Silver Bell mining complexes. This process can economically treat low-grade ore which would not be profitable to process in a concentrator/smelter/refinery process, even when it would be recovered over a longer period of time.

Zinc Refining

Metallic zinc is produced through electrolysis using zinc concentrates and zinc oxides. Sulfur is eliminated from the concentrates by calcinating, and then the zinc oxide is dissolved in a sulfuric acid solution to eliminate impurities. The purified zinc solution is then treated by electrolysis to produce refined zinc and to separate silver, gold, and cadmium which are recovered from the waste materials that are sent to the respective smelters for their recovery. GMEXICO has a zinc electrolytical refinery located in San Luis Potosí and is projecting the construction of an additional zinc refinery to process 100% of its zinc concentrates production.

Sulfuric Acid Production

Sulfur dioxide gases are recovered in the copper smelting and zinc refining processes. As a part of its environmental preservation program, GMEXICO treats the sulfur dioxide emissions at five of its plants, producing sulfuric acid, which is sold to chemical and mining fertilizer companies located in Mexico, the United States, Chile, Australia and elsewhere.

Molybdenum Production

Molybdenum is recovered from copper-molybdenum concentrates produced at the concentrator. The copper-molybdenum concentrate is first treated through a thickener until it becomes a slurry with 60% solids. The slurry is then agitated in a chemical solution and pumped to the flotation separator. The separator produces a froth that carries molybdenum to the surface which is skimmed off and dried to produce molybdenum concentrates of approximately 58%. GMEXICO currently produces molybdenum at its mines in La Caridad, Sonora as well as in its mines in Toquepala and Cuajone, Peru.

Silver and Gold Refining

Silver and gold are recovered from copper, zinc, and lead concentrates in the smelters and refineries. Currently, the following are operating: Mexcobre precious metals refinery, at La Caridad, Asarco precious metal refinery, located in the metallurgic complex in Amarillo, Texas and SPCC precious metals refinery, located in the port of Ilo, Peru.

3. Metal Prices and Tariffs

GMEXICO's metallic products are considered internationally traded commodities. Prices are established based on the two major metals exchanges, Comex and LME, which widely reflect the worldwide balance of supply and demand. The profitability of GMEXICO's operations depends on the price, but basically, on its costs and productivity control. GMEXICO's financial performance is significantly affected by the international market prices for the metals it produces, especially for copper, zinc and silver. Metal prices have historically been subject to cyclical wide fluctuations and are affected by a number of factors beyond the control of GMEXICO. These factors, which affect each commodity to varying degrees, include international economic and political conditions, levels of supply and demand, availability and costs of substitutes, inventory levels maintained by different market agents among other factors. In addition, the market prices of certain metals have occasionally been subject to sudden short-term changes due to speculative activities. Copper prices have been in a downward trend since mid-1997. The copper market price continued to deteriorate until the end of 1999 and since then an important rise has been observed, as a result of a significant recovery in the economies of the Asian countries which has strengthened the industrial metals demand.

The following tables show high, low and average spot prices in U.S. dollars for copper, zinc, and silver for the periods and on the metals exchanges indicated.

	Copper Prices—Comex			Zinc Prices—LME			Silver Prices—Comex		
	High	Low	Period Average	High	Low	Period Average	High	Low	Period Average
	(U.S.\$ per pound)			(U.S.\$ per pound)			(U.S.\$ per pound)		
1994.....	U.S.\$	U.S.\$	U.S.\$	U.S.\$	U.S.\$	U.S.\$	U.S.\$	U.S.\$	U.S.\$
	1.40	0.78	1.07	0.46	0.44	0.45	5.33	4.97	5.28
1995.....	1.46	1.21	1.35	0.55	0.43	0.47	6.10	4.38	5.18
1996.....	1.30	0.87	1.06	0.50	0.44	0.47	5.82	4.68	5.18
1997:									
First quarter.....	1.20	1.02	1.11	0.58	0.47	0.53	5.31	4.61	5.00
Second quarter.....	1.22	1.06	1.14	0.65	0.55	0.59	4.98	4.60	4.73
Third quarter.....	1.17	0.93	1.02	0.80	0.64	0.73	5.19	4.16	4.51
Fourth quarter.....	0.96	0.77	0.86	0.62	0.49	0.54	6.34	4.72	5.30
Year.....	1.22	0.77	1.04	0.80	0.47	0.60	6.34	4.16	4.88
1998:									
First quarter.....	0.83	0.72	0.77	0.52	0.45	0.48	7.26	5.44	6.24
Second quarter.....	0.86	0.73	0.78	0.51	0.45	0.48	6.55	5.04	5.69
Third quarter.....	0.80	0.71	0.75	0.50	0.44	0.46	5.78	4.62	5.18
Fourth quarter.....	0.74	0.65	0.70	0.45	0.42	0.43	5.26	4.66	4.92
Year.....	0.86	0.65	0.75	0.52	0.42	0.46	7.26	4.62	5.51
1999:									